



## AMD Embedded Solutions Product Selection Guide

### A rich mix of high-performance, low-power processors to meet the fast time-to-market demands of today's embedded systems

Along with a range of varied processors, AMD supports the x86 embedded marketplace with design tools, support, and partnerships that offer simplicity and flexibility to create high-performance, feature-rich, and customer-driven products.

AMD is an innovation leader in x86 processor design. AMD's embedded products offer designers processor-level features and a balanced foundation for overall system performance, with the quick time to market offered by commercial off-the-shelf components. Customers using AMD processor-based systems can experience remarkable application performance with scalability, ease of management, and low total cost of ownership. AMD processor-based products are category leaders from enterprise-class servers and cutting-edge consumer systems to traditional embedded markets.

This brochure presents the full array of AMD's embedded processor solutions that deliver maximum performance with low overall system power consumption and are supported by longer than standard availability, a full library of x86 software development applications, and hardware tools. It's time to design and produce the next-generation embedded systems your customers demand — quickly, easily, and efficiently.

### AMD's unique processor designs deliver high performance and balanced system design

AMD's range of embedded solutions provides flexible features and a balanced performance approach for the overall system. Features include:

- Industry-leading performance-per-watt
- Highest available I/O throughput with HyperTransport™ technology
- Integrated memory controller offers low latency and reduced chip count, improving reliability
- Native dual-core processor design provides highly scalable performance gains within a consistent thermal envelope
- Lead-free, four-layer processes with maximum on-board space
- Efficient heat dissipation reduces or eliminates the need for heat sinks and reduces ambient cooling requirements
- Range of available packaging and pin counts meets variety of design requirements

Along with these features and other technical features, embedded designers can count on long-term component availability, comprehensive design support, and AMD's commitment to continue offering new, customer-oriented products. Get to market faster, with more effective products.

### The AMD64 embedded family: leading-edge technology for high-end embedded systems

AMD64 embedded solutions are each uniquely matched to a defined set of product applications. Ranging from high-performance single- and dual-core AMD Opteron™ and AMD Athlon™ 64 processors with Direct Connect Architecture for enterprise-class storage and networking equipment to highly versatile and efficient Mobile AMD Sempron™ processors and AMD Turion™ 64 mobile technology for unique high-performance, smaller form factor applications, the AMD64 family provides high performance, maximum versatility, and minimum design challenge.

### AMD Geode™ processors: optimized for low-power, high-performance applications

The complete family of AMD Geode™ processors is configured to give developers a versatile and flexible suite of x86 solutions that enable fast design cycles and short time-to-market roadmaps. Ideal for applications ranging from thin-client and set-top boxes to printers and personal media players, AMD Geode processors can deliver the highest performance-per-watt in the industry. In addition to processors, the family includes a broad range of design tools including Development Boards (DBs) and Reference Design Kits (RDKs) to empower designers to make maximum use of the established world of x86 software applications.

### Tools and support for developers

AMD offers:

- A full range of RDK products that enable designers to go from concept to finished product quickly
- A broad array of DBs for creating efficient x86 system designs
- Industry partnerships with leading software and hardware specialists, fostering maximum choice for your unique design

### Get better systems to market faster with AMD embedded solutions

Ready to create high-performance, low-power embedded designs that give your innovative new products an edge in the marketplace? Take a close look and experience the AMD advantage.

**For more information, please visit  
[www.amd.com/embedded](http://www.amd.com/embedded)**



# AMD EMBEDDED PROCESSORS

Model	AMD64	Multi-CPU Scalability	Core Frequency	L2 Cache/ Core	Thermal Design Power	Memory Interface	HyperTransport™ Technology	AMD Digital Media Xpress™ Technology	AMD PowerNow!™ Technology	AMD-V™ Technology	EVP¹	Tcase	Socket	Package
AMD OPTERON™ PROCESSORS														
852*	Yes	up to 8	2.6GHz	1MB	93W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	No	Yes	No	Yes	Var.	940	Lidded 940-pin oµPGA
848 HE*	Yes	up to 8	2.2GHz	1MB	55W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	No	Yes	No	Yes	78°C	940	Lidded 940-pin oµPGA
252*	Yes	up to 2	2.6GHz	1MB	93W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	No	Yes	No	Yes	Var.	940	Lidded 940-pin oµPGA
248 HE*	Yes	up to 2	2.2GHz	1MB	55W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	No	Yes	No	Yes	78°C	940	Lidded 940-pin oµPGA
244 EE*	Yes	up to 2	1.8GHz	1MB	30W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	No	Yes	No	Yes	78°C	940	Lidded 940-pin oµPGA
240 EE*	Yes	up to 2	1.4GHz	1MB	30W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	No	Yes	No	Yes	78°C	940	Lidded 940-pin oµPGA
152*	Yes	1	2.6GHz	1MB	93W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	No	Yes	No	Yes	Var.	940	Lidded 940-pin oµPGA
148 HE*	Yes	1	2.2GHz	1MB	55W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	No	Yes	No	Yes	78°C	940	Lidded 940-pin oµPGA
144 EE*	Yes	1	1.8GHz	1MB	30W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	No	Yes	No	Yes	78°C	940	Lidded 940-pin oµPGA
DUAL-CORE AMD OPTERON™ PROCESSORS														
8214 HE	Yes	up to 8	2.2GHz	1MB x2	68W	Dual 64/72 DDR2-667 Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	Yes	Yes	83°C	F(1207)	Lidded 1207 pad LGA
8210 HE	Yes	up to 8	1.8GHz	1MB x2	45W	Dual 64/72 DDR2-667 Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	Yes	Yes	80°C	F(1207)	Lidded 1207 pad LGA
865 HE*	Yes	up to 8	1.8GHz	1MB x2	55W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	No	No	Yes	83°C	940	Lidded 940-pin oµPGA
865*	Yes	up to 8	1.8GHz	1MB x2	95W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	No	Yes	Var.	940	Lidded 940-pin oµPGA
2214 HE	Yes	up to 2	2.2GHz	1MB x2	68W	Dual 64/72 DDR2-667 Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	Yes	Yes	83°C	F(1207)	Lidded 1207 pad LGA
2210 EE	Yes	up to 2	1.8GHz	1MB x2	45W	Dual 64/72 DDR2-667 Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	Yes	Yes	80°C	F(1207)	Lidded 1207 pad LGA
265 HE*	Yes	up to 2	1.8GHz	1MB x2	55W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	No	Yes	83°C	940	Lidded 940-pin oµPGA
265*	Yes	up to 2	1.8GHz	1MB x2	95W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	No	Yes	Var.	940	Lidded 940-pin oµPGA
1214 HE	Yes	1	2.2GHz	1MB x2	68W	Dual 64/72 DDR2-667 Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	Yes	Yes	83°C	F(1207)	Lidded 1207 pad LGA
1210 EE	Yes	1	1.8GHz	1MB x2	45W	Dual 64/72 DDR2-667 Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	Yes	Yes	80°C	F(1207)	Lidded 1207 pad LGA
165 HE*	Yes	1	1.8GHz	1MB x2	55W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	No	Yes	83°C	940	Lidded 940-pin oµPGA
165*	Yes	1	1.8GHz	1MB x2	95W	Dual 64/72 DDR Registered DIMMs, ECC & Chip Kill	Three 16-lane@1GHz Full Duplex	Yes	Yes	No	Yes	Var.	940	Lidded 940-pin oµPGA

Note 1. Enhanced Virus Protection (EVP) is only enabled by certain operating systems including the current versions of Microsoft® Windows®, Solaris, and BSD Unix. After properly installing the appropriate operating system, users must enable the protection of their applications and associated files from buffer overrun attacks. Contact your application software vendor for information regarding use of the application in conjunction with EVP. AMD strongly recommends that users continue to use third-party anti-virus software as part of their security strategy.

\* Not recommended for new designs.

AMD EMBEDDED PROCESSORS

Model	AMD64	Multi-CPU Scalability	Core Frequency	L2 Cache/ Core	Thermal Design Power	Memory Interface	HyperTransport™ Technology	AMD Digital Media Xpress™ Technology	AMD PowerNow!™ Technology	AMD-V™ Technology	EVP <sup>1</sup>	Tcase	Socket	Package
MOBILE AMD SEMPRON™ PROCESSORS														
3700+	Yes	1	2.0GHz	512KB	25W	Dual 64 NON ECC DDR2-667, Unbuffered	One 16-lane@800MHz Full Duplex	Yes	Yes	No	Yes	TJ =95 °C	S1	Lidless 638-pin oµPGA
3500+	Yes	1	1.8GHz	512KB	25W	Dual 64 NON ECC DDR2-667, Unbuffered	One 16-lane@800MHz Full Duplex	Yes	Yes	No	Yes	TJ =95 °C	S1	Lidless 638-pin oµPGA
2100+	Yes	1	1.0GHz	256KB	8W	Dual 64 NON ECC DDR2-400, Unbuffered	One 16-lane@800MHz Full Duplex	Yes	No	No	Yes	TJ =95 °C	S1	Lidless 638-pin oµPGA
AMD TURION™ 64 X2 DUAL-CORE MOBILE TECHNOLOGY														
TL-62	Yes	1	2.1GHz	512KB x2	35W	Dual 64 NON ECC DDR2-800, Unbuffered	One 16-lane@800MHz Full Duplex	Yes	Yes	Yes	Yes	TJ =95 °C	S1	Lidless 638-pin S1 oµPGA
TL-56	Yes	1	1.8GHz	512KB x2	31W	Dual 64 NON ECC DDR2-800, Unbuffered	One 16-lane@800MHz Full Duplex	Yes	Yes	Yes	Yes	TJ =95 °C	S1	Lidless 638-pin S1 oµPGA
TL-52	Yes	1	1.6GHz	512KB x2	31W	Dual 64 NON ECC DDR2-667, Unbuffered	One 16-lane@800MHz Full Duplex	Yes	Yes	Yes	Yes	TJ =95 °C	S1	Lidless 638-pin oµPGA
AMD ATHLON™ 64 PROCESSORS														
3100+	Yes	1	2.0GHz	512KB	25W	Dual 64 ECC DDR2-667, Unbuffered	One 16-lane@1000MHz Full Duplex	Yes	Yes	Yes	Yes	TJ =81 °C	AM2	Lidded 940-pin oµPGA
3000+	Yes	1	1.8GHz	512KB	35W	Dual 64 ECC DDR2-667, Unbuffered	One 16-lane@1000MHz Full Duplex	Yes	Yes	Yes	Yes	Var.	AM2	Lidded 940-pin oµPGA
2600+	Yes	1	1.6GHz	512KB	15W	Dual 64 ECC DDR2-667, Unbuffered	One 16-lane@800MHz Full Duplex	Yes	Yes	Yes	Yes	TJ =85 °C	AM2	Lidded 940-pin oµPGA
2000+	Yes	1	1.0GHz	512KB	8W	Dual 64 ECC DDR2-400, Unbuffered	One 16-lane@1000MHz Full Duplex	Yes	No	Yes	Yes	TJ =85 °C	AM2	Lidded 940-pin oµPGA
AMD ATHLON™ 64 X2 DUAL-CORE PROCESSORS														
3400+	Yes	1	1.8GHz	512KB x2	35W	Dual 64 ECC DDR2-800, Unbuffered	One 16-lane@1000MHz Full Duplex	Yes	Yes	Yes	Yes	Var.	AM2	Lidded 940-pin oµPGA

Note 1. Enhanced Virus Protection (EVP) is only enabled by certain operating systems including the current versions of Microsoft® Windows®, Solaris, and BSD Unix. After properly installing the appropriate operating system, users must enable the protection of their applications and associated files from buffer overrun attacks. Contact your application software vendor for information regarding use of the application in conjunction with EVP. AMD strongly recommends that users continue to use third-party anti-virus software as part of their security strategy.

AMD EMBEDDED PROCESSORS CONTINUED

Processor Family	Device Number	Chipset	Package/ Operating Case Temperature	Core Freq. (Perform. Rating)	Core Volt	Thermal Design Power	Power Management/ Rating	FPU	Memory Support	PCI	Ethernet	IDE	USB	LPC	Audio	UART/ IR	Serial/ Parallel Interfaces	RTC	Max. GPIOs	Security	Display: Max Resolution
AMD Geode™ LX Processors	Geode LX 900@1.5W (Integrated North Bridge/ Graphics) <sup>2</sup>	AMD CS5536	BGU481 0°C to 80°C	600MHz (900)	1.4V	5.1W	ACPI v2.0	MMX™, AMD 3DNow! Technology	DDR400		No	1 Ch., UDMA-100	4 Ports, v2.0	Yes	AC97 v2.3	2/1	ACCESS. bus w/2 Ports	1	32	28-Bit AES w/ Optional In-package EEPROM	CRT: 1920x1440 TFT: 1600x1200 VIP/VOP = 11, 2,0
	Geode LX 800@0.9W (Integrated North Bridge/ Graphics) <sup>2</sup>		BGU481 0°C to 85°C and -40°C to -85°C <sup>4</sup>	500MHz (800)	1.25V	3.6W			DDR400												
	Geode LX 700@0.8W (Integrated North Bridge/ Graphics) <sup>2</sup>		BGU481 0°C to 85°C	433MHz (700)	1.2V	3.1W			DDR333												
AMD Geode™ GX Processors	Geode GX 533@11W (Integrated North Bridge/ Graphics) <sup>2</sup>	AMD CS5536	BGD368 0°C to 85°C	400MHz (533)	1.5V	3.5W	ACPI v2.0	MMX, AMD 3DNow! Technology	DDR266	v2.2	No	1 Ch., UDMA-100	4 Ports, v2.0	1 LDRQ	AC97 v2.1	2/1	ACCESS. bus w/2 Ports	1	32	No	CRT: 1600x1200 TFT: 1280x1024
		AMD CS5535	BGU396 0°C to 85°C									1 Ch., UDMA-66	4 Ports, v1.1								
	Geode GX 500@10W (Integrated North Bridge/ Graphics) <sup>2</sup>	AMD CS5536	BGD368 0°C to 85°C	366MHz (500)	1.5V	3.5W	ACPI v2.0	MMX, AMD 3DNow! Technology	DDR244	v2.2	No	1 Ch., UDMA-100	4 Ports, v2.0	1 LDRQ	AC97 v2.1	2/1	ACCESS. bus w/2 Ports	1	32	No	
		AMD CS5535	BGU396 0°C to 85°C									1 Ch., UDMA-66	4 Ports, v1.1								
	Geode GX 466@0.9W (Integrated North Bridge/ Graphics) <sup>2</sup>	AMD CS5536	BGD368 0°C to 85°C	333MHz (466)	1.5V	3.5W	ACPI v2.0	MMX, AMD 3DNow! Technology	DDR222	v2.2	No	1 Ch., UDMA-100	4 Ports, v2.0	1 LDRQ	AC97 v2.1	2/1	ACCESS. bus w/2 Ports	1	32	No	
		AMD CS5535	BGU396 0°C to 85°C									1 Ch., UDMA-66	4 Ports, v1.1								

Note 2. The Geode LX 900@1.5W processor operates at 600MHz, the Geode LX 800@0.9W processor operates at 500MHz, and the Geode LX 700@0.8W processor operates at 433MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivity/solutions/geodelxbenchmark>

Note 3. The Geode GX 533@11W processor operates at 400MHz, the Geode GX 500@10W processor operates at 366MHz, and the Geode GX 466@0.9W processor operates at 333MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivity/solutions/geodegxbenchmark>

Note 4. -40° to 85°C is the optional Operating Case Temperature for the Geode LX800@0.9W and CS5536. The standard Operating Case Temperature is 0°C to 85°C. Be sure to request the extended temperature version if required.

\*Not recommended for new design

For system and board level products utilizing AMD processors, please visit [www.amd.com/embedded/catalog](http://www.amd.com/embedded/catalog)

AMD EMBEDDED CHIPSETS

Model	Devices	CPU Interface	Package	PCI Express®	PCI	Graphics	DVI/HDMI	LVDS	TV	DVO	SATA II	IDE	USB	Audio	LPC	SPI	SM Bus	Max GPIOs	Display: Max Resolution
AMD M690T	M690T/SB600	1GHz HyperTransport™, AMD Turion™ 64 X2 Dual-Core, Mobile AMD Sempron™, AMD Athlon™ 64, AMD Athlon™ 64 X2 Dual-Core	21mm FCBGA/23mm FCBGA	1x8, 4x1	v2.3	DirectX 9.0, WM/V9 & MPEG-2 Acceleration	1 <sup>1</sup>	24-bit Dual-Channel	Yes	DVI & LVDS Transmitter Support <sup>2</sup>	4, Raid 0, 1, 10	ATA 133	10 v2.0	HD Audio, AC97 v2.3	2 LDRQs	Yes	Yes	73	Dual 2560x1600@ 64-bpp
AMD M690E	M690E/SB600	1GHz HyperTransport™, AMD Turion™ 64 X2 Dual-Core, Mobile AMD Sempron™, AMD Athlon™ 64, AMD Athlon™ 64 X2 Dual-Core	21mm FCBGA/23mm FCBGA	1x8, 4x1	v2.3	DirectX 9.0, WM/V9 & MPEG-2 Acceleration	2 <sup>3</sup>	24-bit Dual-Channel	No	DVI & LVDS Transmitter Support <sup>2</sup>	4, Raid 0, 1, 10	ATA 133	10 v2.0	HD Audio, AC97 v2.3	2 LDRQs	Yes	Yes	73	Dual 2560x1600@ 64-bpp

Note 1. The PCI Express® x8 interface is multiplexed with a TMDS Interface, enabling DVI or HDMI 1.2 with HDCP 1.1 support.

Note 2. The side port memory interface of the M690T and M690E can be configured as a DVO to attach to an additional DVI, LVDS, or CRT transmitter.

Note 3. The LVDS interface of the M690E is multiplexed with a TMDS interface, enabling DVI or HDMI 1.2 with HDCP 1.1 support. This enables support for native dual DVI, however, only one HDMI interface may be enabled at a time.

AMD EMBEDDED DISCRETE GRAPHICS

Model	Interface	Package	Memory	Engine/Memory Clock	Power Management	TDP	Graphics	Video	DVI	LVDS	Analag RGB	DVO	TV	LVDS Display: Max Resolution	DVI Display: Max Resolution
ATI Radeon™ E2400	PCIe® x16 <sup>1</sup>	31mmx31mm BGA <sup>2</sup>	64-bit to 128MB GDDR3	Scaleable to 600/700	PowerPlay™ 7.0 <sup>3</sup>	16W <sup>4</sup>	DirectX 10.0 compliant Shader Model 4.0 OpenGL 2.0 support	ATI Avivo™ HD, Universal Video Decoder for H.264 and VC-1 decode. Motion video decode for HD DVD/Blu-ray technology MPEG 1/2/4 decode and encode acceleration	1 Single-link & 1 Dual-link <sup>2</sup>	18/24-bit Dual-Link	2 Integrated triple 10-bit DACs Max Pixel CLK 400MHz	12-bit DDR or 24-bit SDR	YPbPr, NTSC and PAL	Dual-link: CXGA	Single-link: UXGA Dual-link: WUXGA

Note 1. Can also operate in x8, x4, x2, x1 interface modes.

Note 2. Also available in an MXM-II module with 256MB GDDR3 memory.

Note 3. MXM-II Module does not have ATI Powerplay™ 7.0 enabled.

Note 4. TDP for MXM module is 18W.

Note 5. The dual-link DVI interface of the E2400 is multiplexed with the dual-link LVDS interface.

## AMD GEODE™ SOLUTIONS BASED REFERENCE DESIGN KITS

Name	Processor	Companion Device	Form Factor (Inches)	Video Output	OS <sup>1</sup>			I/O Connectors												
					Windows® XP/XPe	Windows CE	Linux®	Audio Out Channels	USB	PCI Slots	LPC Slots or Headers	Super I/O on Board	Ethernet on Board	Power	Serial ATA	IDE UDMA	Serial Ports	PS/2 Keyboard/Mouse	Parallel Port	IrDA
GX Thin Client	Geode™ GX 533@1.1W <sup>2</sup>	AMD CS5535	5.5x5	CRT	●	●	●	1	4		1		1	12VDC		●				
GX SOM-144 <sup>3</sup>	Geode GX 533@1.1W <sup>2</sup>	AMD CS5535	5.5x5	CRT/TFT	●	●	●							SVDC thru SOM-144 conn.						
GX Single Board Computer	Geode GX 466@0.9W <sup>2</sup>	AMD CS5536	5.5x5	CRT/TFT	●	●	●	1	4					12VDC		●	1	●	●	
LX ETX <sup>3</sup>	Geode LX 800@0.9W <sup>4</sup>	AMD CS5536	3.7x4.5	CRT/TFT	●	5.0	●		4				1	SVDC thru ETX conn.						
LX Ultra Value Client	Geode LX 800@0.9W <sup>4</sup>	AMD CS5536	5.5x5	CRT	●	●	●	1	4		1		1	12VDC		●				
LX EPIC Single Board Computer	Geode LX 800@0.9W or LX 700@0.8W <sup>4</sup>	AMD CS5536	4.5x6.5	CRT/TFT/LVDS	●	5.0	●	2	4	Mini PCI		●	1	Mini-ITX		●	2	●	●	
LX Network Attached Storage Processor	Geode LX 800@0.9W or LX 700@0.8W <sup>4</sup>	AMD CS5536	Mini-ITX	CRT for debug only	●		●		3				1	ATX	1	●	2			

Note 1. OS support typically includes BIOS and drivers for audio, display, and bootloader if required.

Note 2. The Geode GX 533@1.1W processor operates at 400MHz and the Geode GX 466@0.9W operates at 333MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivity/solutions/geodegxbenchmark>

Note 3. The Geode GX SOM-144 and LX ETX are CPU modules that support many features, but require a base board to support the appropriate connectors.

Note 4. The Geode LX 800@0.9W processor operates at 500MHz and the Geode LX 700@0.8W processor operates at 433MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivity/solutions/geodekxbenchmark>

## AMD64 REFERENCE DESIGN KITS

Name	Processor Shipped with RDK	Chipset	Form Factor	Topology	OS		I/O Connectors									Electrical/Mechanical		
					Windows® XP/XPe	Linux®	Display	Ethernet	Aux Slots	IDE	SAS	SATA	Audio	USB	Serial	Standard	NEBS	Compliance
Second-Generation AMD Opteron™ Processor-based AdvancedTCA® Blade RDK	AMD Opteron Model 2210 EE	Broadcom HT2100, HT1000	ATCA® Blade	Dual Star Backplane or 5 slot Full Mesh		●	None	Dual 1G to Fabric, Dual 1G to Base	AMC x2 Half Height		●			2	1	Core Specification PICMG 3.0	NEBS Level-3 and ETSI Installations	RoHS Compliant
AMD Socket S1 Processor COM Express RDK	AMD Turion™ 64 X2 Model TL-56, Mobile AMD Sempron™	AMD M690T/E with Radeon X1250 Radeon™ Graphics	COM Express Type 2	N/A	●	●	DVI, LVDS, Analog VGA, TV	1G	3x1 PCIe®, 1x8 PCIe, PCI	2 Ch		4	HD	8		COM.0		RoHS Compliant

AMD DEVELOPMENT BOARDS

Name	Processor (* Denotes Processor shipped in Kit)	Chipset	Form Factor (Inches)	Display Output	OS (Note 1)					I/O Connectors															Typical Kit Contents				
					Windows® XP/Pe	Windows CE 4.2	Windows CE 5.0	Linux® 2.4.x	Linux 2.6.x	Audio Out Channels	USB	PCI Express® Slots	PCI Express Mini Card	PCI Slots	Mini-PCI	LPC Slots or Headers	Super I/O on Board	Ethernet on Board	Power	Serial ATA	IDE/UDMA	Serial Ports	PS/2 Keyboard/Mouse	Parallel Port	IrDA	TV Output Adapter Cable	TFT Interface Card	DVI/HDMI Adapter Board	CD-ROM/Std. Documentation
AMD GEODE™ SOLUTIONS BASED DEVELOPMENT BOARDS																													
LX DB800	Geode™ LX 800@0.9W <sup>2</sup>	AMD CS5536	Mini-ITX/ETX	CRT, TFT	●		●		●	2	4			1 <sup>5</sup>		1	1	1	ATX		●	3	1	1	1				●
GX DB533-C	Geode GX 533@1.1W* Geode GX 500@1.0W Geode GX 466@0.9W <sup>3</sup>	AMD CS5535	SOM-144 Flex ATX 7.5x9	CRT	●	●		●		5	4			3 <sup>4</sup>		1	1	1	ATX		●	2	1	1					●
GX DB533-T				TFT																									
AMD64 BASED DEVELOPMENT BOARDS																													
SI DBM690T/E	Mobile AMD Sempron™ 3500+*, AMD Turion™ 64 X2 TL-52, AMD Turion 64, AMD Sempron 2100+	AMD M690T or M690E, SB600	ATX	CRT, DVI/HDMI, LVDS	●				●	7.1	9	1x16 <sup>6</sup> 1x1	●	3	●	1	1	1	ATX	4	●	1	1	1				●	

Note 1. OS support typically includes BIOS and drivers for audio, display, and bootloader if required.

Note 2. The Geode LX 800@0.9W processor operates at 500MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivitysolutions/geodegxbenchmark>

Note 3. The Geode GX 533@1.1W processor operates at 400MHz, the Geode GX 500@1.0W processor operates at 366MHz, and the Geode GX 466@0.9W processor operates at 333MHz. Model numbers reflect performance as described here: <http://www.amd.com/connectivitysolutions/geodegxbenchmark>

Note 4. The Geode GX DB533 has a total of three slots — two at 3.3V and one at 5.0V. Two slots available at 66MHz or three slots available at 33MHz.

Note 5. The Geode LX DB800 has one 32-bit, 66/33MHz, 3.3V (non-5V tolerant) PCI slot. Additionally, a bridge card that offers two 32-bit, 66/33MHz, 3.3V (5V tolerant) slots is shipped with the development board. The bridge card occupies the one slot on the main board.

Note 6. The SI DBM690T has one x16 PCI Express® Slot that is supported by a 1x8 PCI Express interface.

About AMD

AMD (NYSE:AMD) designs and produces innovative microprocessors and low-power processor solutions for the computer, communications, and consumer electronics industries. AMD is dedicated to delivering standards-based, customer-focused solutions for technology users, ranging from enterprises and governments to individual consumers. [www.amd.com](http://www.amd.com)

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